MIAMI-SOUTH FLORIDA
National Weather Service
Forecast Office
http://www.weather.gov/miami

Tornado in Everglades of Collier County on June 24th, 2012 (courtesy Dan Floyd)

2021 Severe Weather Awareness Week

Wednesday, February 3rd is Tornado and Thunderstorm Awareness Day

Tornado Drill at 10:00 AM EST

No other country in the world has more tornadoes than the United States. On average, over 1,000 tornadoes are *reported* in the United States every year, resulting in 68 deaths and over 1,500 injuries. South Florida is certainly no stranger to tornadoes and severe thunderstorms, and they occur more frequently here than some people realize. Since 1996, South Florida has averaged eleven (11) reported tornadoes per year, and since 1950 a total of 155 tornadoes of EF-1 or EF-2 intensity on the Enhanced Fujita Scale

(winds greater than 85 mph) have occurred. South Florida tornadoes occur with a variety of weather systems including: strong winter/spring cold fronts, waterspouts moving onshore, tornadoes embedded in the outer rain bands of tropical storms and hurricanes, and even from ordinary afternoon thunderstorms if the conditions are just right.

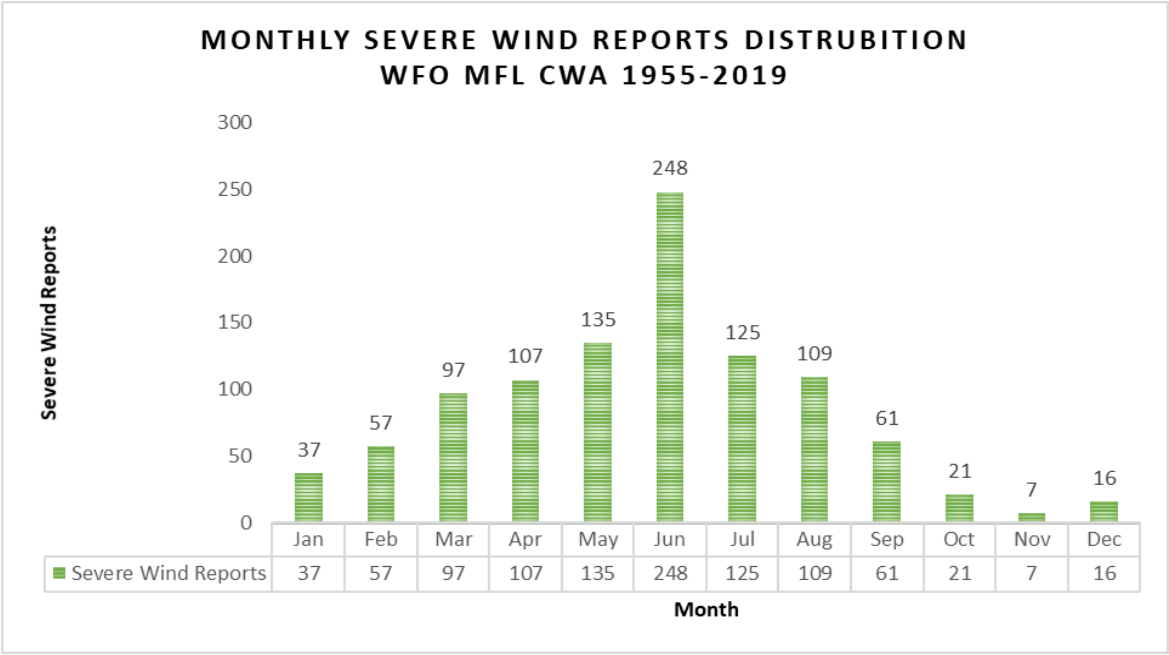
Over 90% of South Florida tornadoes fall in the EF-0 and EF-1 category, which translates to winds less than 110 mph. Impacts from these tornadoes typically include: significant damage to mobile homes, uprooted trees/broken tree branches, downed power lines, minor structural/roof damage to buildings, and patio/pool screen enclosures. A total of 6 tornadoes were *reported* in South Florida in 2020, and only 10 in the past 2 years combined. This reflects the year-to-year variability in tornadoes, and not necessarily an indication that tornado activity will continue to decrease every year. A relatively inactive year can be followed by an active year. Since 2015, six (6) people in South Florida have been injured by tornadoes, a sign that ANY tornado is dangerous.

Even waterspouts (tornadic circulation on water) can be dangerous to boaters as well as to those at the beach. On May 25th, 2015, a waterspout moved onshore Fort Lauderdale Beach and flipped a bounce house in the air about 30 feet, injuring four children who were in the bounce house at the time. More recently, on August 19th, 2020 a waterspout moved along the beach at Golden Beach, damaging fences and trees along a narrow path near the shoreline.

NWS Storm Survey picture from Miami Springs on January 23rd, 2017

Tornadoes have occurred in every month in South Florida, but occur mostly from May to August when thunderstorms are most frequent (Figure 1). In 2020, one (1) tornado occurred in January, and one each in April, May, July, and August. Most South Florida

tornadoes are relatively small and short-lived. This means that it is often very difficult to give plenty of advance warning. In many cases, only a few minutes of warning are given between the time a warning is issued by the National Weather Service and the tornado touchdown. Nevertheless, even a few minutes of warning can make the difference between life and death.



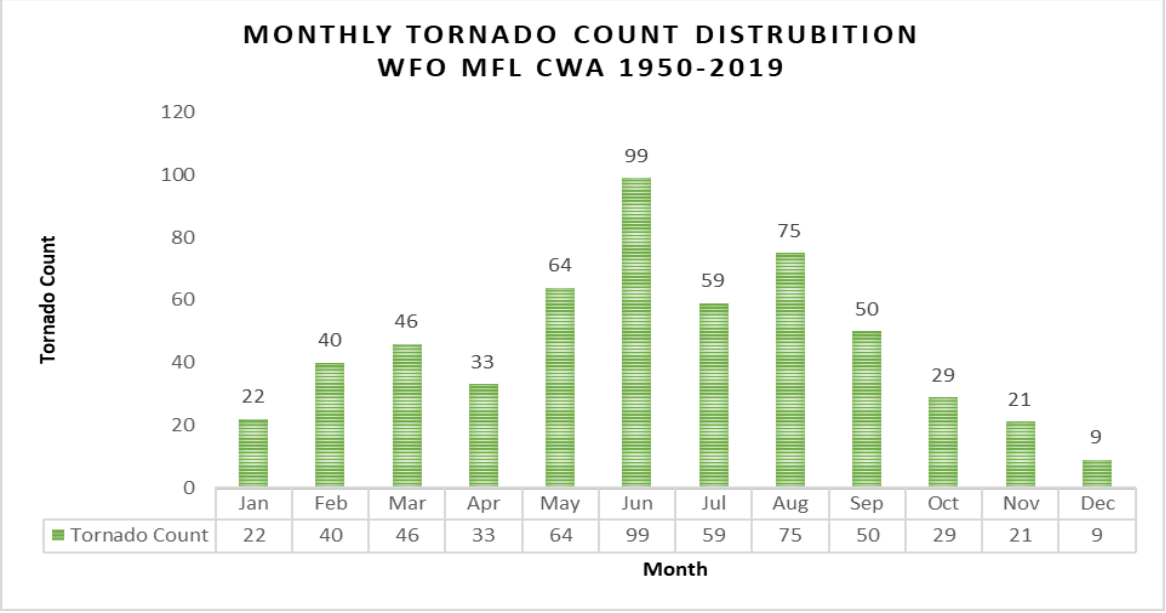


Figure 1: Graphs showing historical monthly distribution of severe thunderstorm wind reports (typically 58 mph or greater) and tornadoes in southern Florida from 1955-2019 and 1950-2019, respectively

Knowing how to receive weather warnings is critical to your safety. Fortunately, there are many ways to get these warnings. One option is owning a NOAA Weather Radio (Figure 2). Having a NOAA Weather Radio is a critical component of the warning system. In fact, having a weather radio available to alert of an approaching tornado has proven to save lives, especially for nighttime tornadoes when people are normally asleep and otherwise wouldn't receive alerts. Local media will also relay tornado warnings via the Emergency Alert System (EAS).

Figure 2: NOAA Weather Radio – important for protecting lives and property.

In South Florida, there are six (6) different transmitters relaying weather information 24/7 (Figures 3 and 4). Weather messages are repeated every four (4) to six (6) minutes and are routinely updated every one (1) to three (3) hours, or more frequently when severe weather strikes. During severe weather such as tornadoes, NWS forecasters can interrupt the routine weather broadcasts and insert special warning messages concerning imminent threats to life and property. The forecaster can also add special codes to warnings that trigger "alerting" features of specially equipped receivers. In the simplest case, this signal activates audible or visual alarms, indicating that an emergency condition exists within the radio listening area and alerts the listener to press a button or turn up the volume and stay tuned for more information.

Transmitter	Station I.D.	Frequency
Miami	KHB34	162.55
Spanish	WZ2531	162.500
Princeton	WNG663	162.425
West Palm Beach	KEC50	162.475
Naples	WWG92	162.525
Belle Glade	WXM58	162.400

Figure 3: South Florida NOAA Weather Radio transmitters and frequencies

County	SAME ID	NOAA Weather Radio Stations
Broward	012011	Miami, Palm Beach, and Spanish Station
Collier	012021	Naples and Ft Myers
Glades	012043	Ft Myers and Belle Glade
Hendry	012051	Naples, Ft Myers, and Belle Glade
Miami-Dade	012086	Miami, Princeton, and Spanish Station
Monroe	012087	Naples, Tea Table Key, Princeton, and Key West
Palm Beach	012099	Palm Beach and Belle Glade

Figure 4: South Florida counties and associated NOAA Weather Radio Stations

There are also many mobile services available to alert of tornadoes, including Wireless Emergency Alerts (WEA) which allows people who own wireless smartphones and other enabled mobile devices to receive geographically-targeted, text-like messages alerting them of imminent threats to safety in their immediate area. Apps such as the one from FEMA provide free weather alert notification to mobile devices.

It is important to understand the meaning of the terminology meteorologists use to assess the threat of tornadoes in your community. A **Tornado Watch** means that atmospheric conditions are conducive for tornadoes. Remain alert for approaching storms. A **Tornado Warning** means that a tornado has been sighted by a weather spotter or member of the public, or indicated by weather radar.

IMPORTANT TORNADO SAFETY TIP

When a tornado warning is issued for your area, **move immediately to your pre-designated place of safety** which should be an interior room or hallway on the lowest floor away from windows, or underneath a desk or table if a windowless room is not available. In a multi-story building, go to the lowest floor.

TORNADO DRILL INFORMATION

On the morning of the drill, all participants should consider themselves under a Tornado Watch. A Watch means you should monitor the weather and be prepared to go to a safe place in the event of a Warning. At 10:00 AM EST, the National Weather Service will issue a practice Tornado Warning. The warning will be broadcast on NOAA Alert Radios as a **routine weekly test message** (**NOT** a live warning). Everyone is encouraged to participate in the drill by activating their tornado safety plan at 10:00 AM EST. This is especially encouraged at schools, businesses and hospitals. The tornado drill will last until 10:30 AM EST when the test tornado warning will be cancelled.

Severe thunderstorms are also fairly common in South Florida. These are defined as thunderstorms containing wind speeds of at least fifty-eight (58) mph and/or large hail

of at least one inch in diameter. Severe thunderstorms can occur year-round but are most common from March to August. Winds in excess of fifty-eight (58) mph can cause damage to trees, cause signs to fly through the air, knock down power lines, and even cause structural damage to buildings. Large hail, although usually not damaging in South Florida, can still pose a threat, especially in urban areas where vehicles can suffer damage. Large hail can also damage crops.

Tornado and severe thunderstorm warnings are normally issued within thirty (30) minutes of an expected impact, and people are urged to take immediate protective action due to the imminent nature of the threat.

For more information on tornadoes and thunderstorms, including safety information, visit the National Weather Service Tornado website and the National Weather Service Severe Thunderstorm website.

Make sure to visit our website at weather.gov/miami for the latest weather information, including information on potential tornado and thunderstorm threats, watches and warnings. Also monitor NOAA Weather Radio and local media, particularly during potentially threatening weather days.